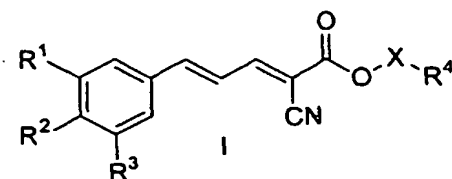


## Claims:

1. A compound of Formula I, or a salt, solvate or hydrate thereof:



5 wherein

$R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $NH_2$ ,  $NH-C_{1-6}$ alkyl,  $N(C_{1-6}alkyl)(C_{1-6}alkyl)$ , SH,  $S-C_{1-6}alkyl$ ,  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo;

$R^4$  is unsubstituted Ar, or Ar substituted with 1-4 substituents, independently selected  
10 from  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy and halo;

X is selected from  $(CH_2CH_2O)_n$  and  $(CH_2)_n$ , and

$n = 1-4$ .

2. The compound according to claim 1, wherein

$R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $C_{1-4}$ alkyl,  $C_{1-4}$ alkoxy,

15  $NH_2$ ,  $NH-C_{1-4}alkyl$ ,  $N(C_{1-4}alkyl)(C_{1-4}alkyl)$ ,  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo;

$R^4$  is  $C_{1-6}alkyl$ ,

X is  $(CH_2CH_2O)_n$ , and

$n = 1-4$ .

3. The compound according to any of claims 1 and 2, wherein  $R^1$ ,  $R^2$  and  $R^3$  are  
20 each independently selected from H, OH,  $C_{1-4}alkyl$ ,  $C_{1-4}alkoxy$ ,  $NH_2$ ,  $NH-C_{1-4}alkyl$ ,  $N(C_{1-4}alkyl)(C_{1-4}alkyl)$ ,  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo.

4. The compound according to claim 3, wherein  $R^1$ ,  $R^2$  and  $R^3$  are each  
independently selected from H, OH,  $OCH_3$ ,  $NH_2$ ,  $N(CH_3)_2$  and  $NO_2$ .

5. The compound according to claim 4, wherein  $R^1$ ,  $R^2$  and  $R^3$  are each  
25 independently selected from H, OH, and  $OCH_3$ .

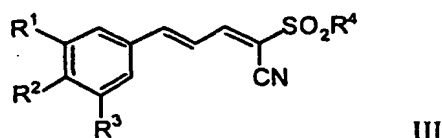
6. The compound according to claim 1, wherein  $R^4$  is unsubstituted Ar.
7. The compound according to claim 6, wherein  $R^4$  is phenyl.
8. The compound according to claim 2, wherein  $R^4$  is methyl or ethyl.
9. The compound according to claim 8, wherein  $R^4$  is methyl.
- 5 10. The compound according to claim 9, wherein n is 2-3.
11. The compound according to claim 10, wherein n is 3.
12. A compound selected from:
  - 2-Cyano-5-(4-hydroxy-3,5-dimethoxyphenyl)-penta-2E,4E-dienoic acid benzyl ester (CRIX-38)
  - 10 2-Cyano-5-(3,4-dihydroxyphenyl)-penta-2E,4E-dienoic acid benzyl ester (CRIX-39)
  - 2-Cyano-5-(3,4-dihydroxyphenyl)-penta-2E,4E-dienoic acid 2-[2-(2-methoxyethoxy)ethoxy] ethyl ester (CRIV-42)
  - 2-Cyano-5-(4-hydroxy-3,5-dimethoxyphenyl)-penta-2E,4E-dienoic acid 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester (CRIV-46); and
  - 15 2-Cyano-5-(4-hydroxy-3-methoxyphenyl)-penta-2E,4E-dienoic acid benzyl ester (CRIX-79).
13. A composition comprising a compound according to any one of claims 1 to 12 in admixture with a pharmaceutically acceptable diluent or carrier.
14. A use of a compound according to any of claims 1-12, and/or a composition  
20 according to claim 13, to prepare a medicament to modulate cell proliferation.
15. The use according to claim 14, for inhibiting cell proliferation.
16. The use according to claim 15, wherein the cell is a malignant hematopoietic cell.

17. A method of modulating cell proliferation comprising administering an effective amount of a compound according to any of claims 1-12, and/or a composition according to claim 13, to a cell or animal in need thereof.

18. The method according to claim 17, for inhibiting cell proliferation.

5 19. The method according to claim 18 wherein the cell is a malignant hematopoietic cell.

20. A compound of Formula III, and/or a salt, solvate, or hydrate thereof:



wherein

10  $R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $NH_2$ ,  $NH-C_{1-6}$ alkyl,  $N(C_{1-6}$ alkyl)( $C_{1-6}$ alkyl), SH,  $S-C_{1-6}$ alkyl,  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo; and  $R^4$  is selected from  $C_{1-6}$ alkyl, phenyl and pyridyl, wherein phenyl and pyridyl are unsubstituted or substituted with 1-4 substituents, independently selected from  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy and halo, with the provisos that when  $R^1$  and  $R^3$  are both H and  $R^4$  is unsubstituted phenyl,  $R^2$  is not H, Cl, or  $OCH_3$ ; when  $R^1$  and  $R^2$  are both H and  $R^4$  is unsubstituted phenyl,  $R^3$  is not  $NO_2$ ; and when  $R^1$  and  $R^3$  are both H and  $R^4$  is  $CH_3$ ,  $R^2$  is not  $N(CH_3)_2$ .

15

21. The compound according to claim 1, wherein  $R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $C_{1-4}$ alkyl,  $C_{1-4}$ alkoxy,  $NH_2$ ,  $NH-C_{1-4}$ alkyl,  $N(C_{1-4}$ alkyl)( $C_{1-4}$ alkyl),  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo.

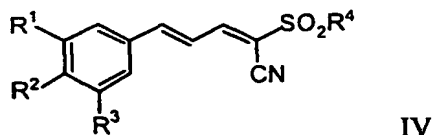
20

22. The compound according to claim 21,  $R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $OCH_3$ ,  $NH_2$ ,  $N(CH_3)_2$  and  $NO_2$ .

23. The compound according to claim 20, wherein  $R^4$  is selected from  $C_{1-4}$ alkyl, phenyl and pyridyl.
24. The compound according to claim 23, wherein  $R^4$  is selected from  $CH_3$  and phenyl.
- 5 25. The compound according to claim 24, wherein  $R^4$  is unsubstituted phenyl.
26. The compound according to claim 20, wherein phenyl and pyridyl are unsubstituted or substituted with 1-3 substituents, independently selected from  $C_{1-4}$ alkyl,  $C_{1-4}$ alkoxy and halo.
27. The compound according to claim 24, wherein phenyl is unsubstituted or  
10 substituted with 1-2 substituents, independently selected from  $C_{1-4}$ alkyl,  $C_{1-4}$ alkoxy and halo.
28. The compound according to claim 20, wherein at least one of  $R^1$ ,  $R^2$  and  $R^3$  is OH while  $R^4$  is selected from unsubstituted phenyl and phenyl substituted with 1-4 substituents, independently selected from  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy and halo.
- 15 29. A compound selected from:  
2-Benzenesulfonyl-5-(3,4-dihydroxyphenyl)-penta-2E,4E-dienitrile (CRVIII-33),  
2-Benzenesulfonyl-5-(4-hydroxy-3,5-dimethoxyphenyl)-penta-2E,4E-dienitrile  
(CRVIII-34),  
2-Benzenesulfonyl-5-(4-nitrophenyl)-penta-2E,4E-dienitrile (CRVIII-35),  
20 5-(3,4-Dihydroxyphenyl)-2-(pyridine-2-sulfonyl)-penta-2E,4E-dienitrile (CRVIII-  
50),  
2-(4-Chlorobenzenesulfonyl)-5-(3,4-dihydroxyphenyl)-penta-2E,4E-dienitrile  
(CRVIII-51),  
5-(3,4-Dihydroxyphenyl)-2-(toluene-4-sulfonyl)-penta-2E,4E-dienitrile (CRVIII-  
25 52), and  
5-(3,4-Dihydroxyphenyl)-2-methanesulfonyl-penta-2E,4E-dienitrile (CRVIII-53).

30. A composition comprising a compound according to any one of claims 20 to 29 in admixture with a pharmaceutically acceptable diluent or carrier.

31. A composition comprising, in admixture with a pharmaceutically acceptable diluent or carrier, a compound of Formula IV, and/or a salt, solvate or hydrate thereof:

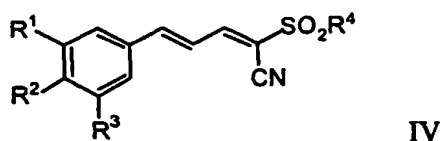


wherein

$R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $NH_2$ ,  $NH-C_{1-6}$ alkyl,  $N(C_{1-6}$ alkyl)( $C_{1-6}$ alkyl), SH,  $S-C_{1-6}$ alkyl,  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo; and

$R^4$  is selected from  $C_{1-6}$ alkyl, phenyl and pyridyl, wherein phenyl and pyridyl are unsubstituted or substituted with 1-4 substituents, independently selected from  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy and halo.

32. A use to prepare a medicament to modulate cell proliferation of a composition according to claim 30 or 31, and/or a compound capable of modulating cell proliferation of Formula IV, and/or a salt, solvate or hydrate thereof:



wherein

$R^1$ ,  $R^2$  and  $R^3$  are each independently selected from H, OH,  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy,  $NH_2$ ,  $NH-C_{1-6}$ alkyl,  $N(C_{1-6}$ alkyl)( $C_{1-6}$ alkyl), SH,

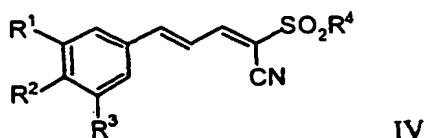
$S-C_{1-6}$ alkyl,  $NO_2$ ,  $CF_3$ ,  $OCF_3$  and halo; and

$R^4$  is selected from  $C_{1-6}$ alkyl, phenyl and pyridyl, wherein phenyl and pyridyl are unsubstituted or substituted with 1-4 substituents, independently selected from  $C_{1-6}$ alkyl,  $C_{1-6}$ alkoxy and halo.

33. The use according to claim 13, for inhibiting cell proliferation.

34. The use according to claim 14 wherein the cell is a malignant hematopoietic cell.

35. A method of modulating cell proliferation comprising administering to a cell  
5 or animal in need thereof an effective amount of a composition according to any of  
claims 30 and 31, and/or a compound capable of modulating cell proliferation of  
Formula IV, and/or a salt, solvate or hydrate thereof:



wherein

- 10 R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are each independently selected from H, OH, C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkoxy,  
NH<sub>2</sub>, NH-C<sub>1-6</sub>alkyl, N(C<sub>1-6</sub>alkyl)(C<sub>1-6</sub>alkyl), SH,  
S-C<sub>1-6</sub>alkyl, NO<sub>2</sub>, CF<sub>3</sub>, OCF<sub>3</sub> and halo; and  
R<sup>4</sup> is selected from C<sub>1-6</sub>alkyl, phenyl and pyridyl, wherein phenyl and pyridyl are  
unsubstituted or substituted with 1-4 substituents, independently selected from  
15 C<sub>1-6</sub>alkyl, C<sub>1-6</sub>alkoxy and halo.

36. The method according to claim 35, for inhibiting cell proliferation.

37. The method according to claim 36, wherein the cell is a malignant hematopoietic cell.